CITY OF MINNEAPOLIS AND SHAKOPEE MDEWAKANTON SIOUX COMMUNITY

Memorandum of Understanding

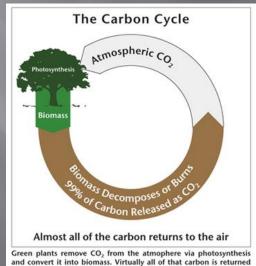


Terra Preta



What is Biochar

 Biochar is the carbon (C) rich product when biomass, such as wood, manure or leaves, is heated with little or no available oxygen. International Biochar Initiative



biomass is burned as a renewable substitute for fossil fuels.

Up to half of the carbon is sequestered Green plants remove CO₂ from the atmophere via photosynthesis and convert it into biomass. Up to half of that carbon is removed and sequestered as biochar, while the other half is converted to renewable energy co-products before being returned to the atmosphere.

Syn-Gas or Bio-Oil

The Biochar Cycle

Atmospheric Co

Biochar

Energy

to the atmosphere when plants die and decay, or immediately if the

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Biomass

Pyrolysis

Benefits of biochar

- Reduces carbon footprint of agriculture.
- Sequester carbon for over 1,000 years.
- Reduces nitrate run-off.
- Reduces erosion.
- Increases drought-resistance of crops.
- Reduces storm water run-off.
- Increases soil fertility or health.
- Increases crop yields.

Urban Challenges Addressed

- Improve health in minority communities.
- Decrease disparity in access to locally grown foods.
- Marginal urban soils for urban farming
- Emerald Ash Borer and public health.
- Storm damage to urban canopy
- Stress from climate change.

Cup of Coffee

- Mike Whitt
- Afghanistan
- Cup of Coffee
- A partnership is born





Proposal

- The City purchased biochar using its pollution impact fees as part of its environmental initiatives
- When mixed (charged) with compost, biochar is a powerful soil amendment.
- The Mdewakanton Sioux provide compost and land for demonstration plots.
- The City and the Mdewakanton Sioux work together through the compost facility to develop this soil amendment
- The City and The Mdewakanton Sioux work with community organizations to set up demonstration plots on the Mdewakanton Sioux land and in the Minneapolis urban core.

Demonstration Sites.

- Establish demonstration plots in the Philips neighborhood.
- Three plots: no treatment; compost; compost and biochar.
- Measure results.
- Education and Outreach

Comparison



Comparison



Stakeholders

- Indian Health Board
- 24th Street Urban Farming Coalition
- Women's Environmental Institute
- Dream of Wild Health
- Homegrown Minneapolis
- Morton Arboretum
- Minneapolis Park Board
- University of Minnesota
- University of Minnesota Extension
- United States Department of Agriculture

Conclusion



